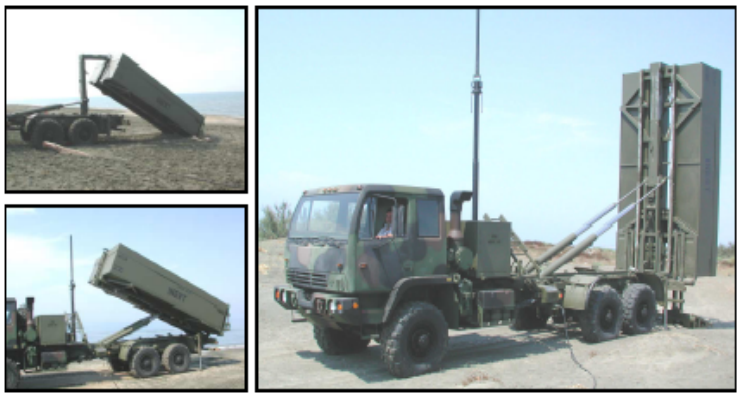
# First to Fire Newsletter

## MEADS Launcher Completes Acceptance Tests



*MEADS International recently released the first photos of the Medium Extended Air Defense System launcher following a successful series of demonstrations and tests.*

MEADS International recentlycompleted a successful series of demonstrations and tests of its advanced lightweight launcher prototype in Brescia, Italy, and has released the first photographs of the launcher. The MEADS launcher is designed to rapidly initialize, self-load and vertically launch up to 12 Patriot Advanced Capabilities-3 (PAC-3) missiles and is able to roll-on/roll-off C-130 transport aircraft.

The launcher tests included demonstrations of uploading and offloading representative PAC-3 missile canisters using a unique system that significantly reduces the manpower required by the current Patriot system. Once loaded, the canisters were elevated to the proper launch angle with emplacement of stabilizers and blast deflector. Each function was successfully performed in manual and automatic modes using the launcher control panel. To ensure C-130 compatibility, tests of dimensional requirements were also conducted.

"The tests took place in the presence of military observers from the three nations co-developing MEADS," said MEADS International Chief Engineer Pietro Ragonese. "Military representatives from Germany, Italy and the United States were all highly impressed with the simplicity of operating the launcher and its demonstrated unloading-reloading times, which were well within requirements stipulated by the three countries. The MEADS program remains on track and on budget."

"This is a tremendous step forward for the MEADS program," said MEADS International President Klaus Riedel. "The MEADS launcher introduces several advanced capabilities never before implemented in a lightweight launcher. Because it combines roll-on/roll-off capability on the C-130 and A400M aircraft with high firepower and networked operation, it is a significant advancement over the cumbersome, hard-to-transport launchers currently in use today."

Unlike Patriot—or any other deployed system—the mobile air defense system will be able to destroy all incoming tactical or medium-range ballistic missiles, cruise missiles, unmanned aerial vehicles or aircraft as well, as weapons of mass destruction. It provides vastly greater firepower, combat- proven "hit-to-kill" technology, 360-degree radar coverage, and a plug-and-fight battle management network architecture. Designed to replace Patriot systems in the United States and Nike Hercules systems in Italy, MEADS also meets the "capabilities oriented" requirements of Germany's air defense concept.

MEADS International developed the launcher with principal subcontractors MBDA-Italia, EADS/LFK, Lockheed Martin, ATIB, Rampini and Stewart & Stevenson.

In 1999, MEADS International, Inc. was selected by NAMEADSMA, a chartered organization of NATO, to develop MEADS. A multinational joint venture headquartered in Orlando, Fla., MEADS International's participating companies are MBDA Italia, EADS European Aeronautic Defence and Space Company and LFK-Lenkflugkorpersysteme (LFK, a subsidiary of EADS and MBDA) in Germany, and Lockheed Martin in the United States. Together, these companies have focused an international engineering team in Orlando to develop systems and technologies for MEADS, a model program for collaborative transatlantic development.

MEADS is currently in the Risk Reduction Effort phase. The United States, Germany, and Italy are financing the program in shares of 55, 28 and 17 percent respectively.

## Pentagon Approves MEADS, PAC-3 Merger

The Defense Department has approved plans to combine the Patriot PAC-3 and Medium Extended Air Defense System (MEADS) programs, but has directed the Army to produce detailed blueprints.

"The tri-national team is validating that its approach to developing standardized interfaces required for a

sophisticated netted/distributed system really works," said Brig. Gen. Thomas J. Gericke, NAMEADSMA's General Manager who witnessed the demonstration. "This will allow MEADS to provide flexibility and capability unlike any other fielded or planned air and missile defense system."

Proving successful integration and control of a simulated PAC-3 missile using sensor and control elements in the MEADS architecture represents a major step in advancing the system closer toward system design and development. All systems worked as planned and verified the MEADS intra-system plug-and-fight concept and the communications software design.

"After we injected a threat into the simulation, the radars produced tracking reports, and the Battle Management Command, Control, Communications, Computers and Intelligence (BMC4I) system used the reports to decide when and whether to launch," said MEADS International president Klaus Riedel. "Once the launcher received the command and launched a missile, processors tracked the threat and the Multi-function Fire Control Radar (MFCR) provided initial missile guidance. The missile seeker acquired the threat and PAC-3's hit-to-kill technology destroyed the target."

A second major objective also was achieved by demonstrating technological maturity and cost reduction for MEADS, which will enter development next year.

Air and missile defense lessons learned during the recent Iraqi conflict validated the MEADS system requirements to provide key improvements in BMC4I, strategic and tactical mobility, 360-degree coverage, operator situational awareness, and target classification, discrimination, and identification. MEADS will also provide significant reductions in operation and in support burdens and costs compared to the Patriot system.

**Galva Guard ADA Battery On Alert**

According to the Kewanee *Star Courier*, Battery F, 202nd Air Defense Artillery, Illinois Army National Guard, has been placed on alert status with potential of being called to active duty. The newspaper reported that Maj. Tim Franklin of the Illinois National Guard headquarters in Springfield verified the Stinger Manportable Air Defense battery is part of a Guard/Army infantry force package being "looked at" by the Department of Defense (DOD) for possible deployment to Iraq, or another location in the world.

"If your unit is placed on alert, there's s good chance you'll be mobilized," Franklin said. Alert status could last up to two months. "There's also a chance a unit could be taken off alert at any time," the major said.

**U.S. Forces Korea Patriot Brigade Activation Story 'False Information'**

In a press release, U.S. Forces Korea labeled a South Korean newspaper report that the command plans to activate a Patriot missile air defense brigade "false information." According to *Pacific Stars & Stripes*, a major South Korean daily quoted an anonymous USFK official as saying "the foundation of a Patriot missile air defense brigade means that we will have an independent and perfect anti-communism net toward the most threatening North Korean ballistic missiles." Deputy USFK spokeswoman Lt. Col. Deborah Bertrand said an announcement regarding Patriot systems will be available shortly. The 1st Battalion, 43rd Air Defense Artillery, has six Patriot batteries at Suwon, Kunsan and Osan air bases.

**Army Selects Northrop Grumman Concept for Mobile High-Energy Laser Weapon**

The U.S. Army and the Israeli Ministry of Defense have selected a Northrop Grumman Corporation design concept for the Mobile Tactical High-Energy Laser (MTHEL) prototype, a laser weapon capable of shooting down short-range rockets and artillery projectiles in flight.

"MTHEL represents a transformational weapon system—the first mobile directed energy weapon that will be able to destroy tactical airborne threats in midair,'' said Pat Caruana, Northrop Grumman Space Technology vice president for missile defense.`"The system meets critical air and missile defense needs for both the U.S. Army and IMoD and represents the culmination of over 30 years of Northrop Grumman investments in high-energy lasers.''

The choice of a design concept is a key step preceding development of the MTHEL prototype, which will take place during fiscal years 2004 through 2007. Laser weapons operate by projecting a highly focused, high-power beam of light that delivers enough energy on a rocket or artillery projectile to explode it in midair. The cost per shot, primarily cost of the chemicals used to fuel the laser, is expected to be in the thousands of dollars-far less expensive than the cost of kinetic energy defense systems, in which a sophisticated rocket or projectile collides with a target to destroy it. Kinetic energy kill vehicles are not reusable.

**Lockheed Martin Prepares THAAD for Resumption of Flight Test**

Aviation Week & Space Technology reported that Lockheed Martin engineers are preparing to conduct major system ground tests this fall to prepare the Theater High Altitude Area Defense system for the resumption of

flight testing in 2004. Intercept tests are to follow in 2005. After a string of early test failures blamed on quality control problems, the THAAD program achieved successive hits in the summer of 1999. According to *Aviation Week & Space Technology*, the Pentagon opted to move into the current development phase and build new missiles, rather than continuing to struggle with the original hardware.

**MDA Deputy Says Allied Commanders May Command and Control U.S. Missile Defense Assets**

J. David Martin, the Missile Defense Agency's deputy for strategic relations, says operational command and control of U.S. missile defense assets may not always rest in the hands of U.S. combatant commanders. According to *Inside Defense*, Martin said that transitioning command and control needed to defeat ballistic missiles launched against U.S. and allied troops and possibly the continental United States is a "key difficulty" because the missiles will likely fly through two or more United States combatant commands.

"That becomes more complex when you add allied commanders," said Martin, who added that control of the defensive mission might one day be the province of one of these allied commanders. Martin spoke at the ComDef 3003 conference in Washington, D.C.

**Three-Stage Missile Defense Booster Tested**

On August 16, the Missile Defense Agency conducted the first flight test of a prototype three-stage booster meant to lift the Ground-Based Midcourse Missile Defense System's Exoatmospheric Kill Vehicle into space. MDA and the booster's manufacturer, Orbital Sciences Corporation, declared the test a success. The three-stage booster, which was launched from Vandenberg Air Force Base, California, traveled approximately 5,300 kilometers and reached a peak altitude of nearly 1,900 kilometers. No intercept was attempted as part of the test, which was limited to checking whether the booster would work properly and hold its course. A less powerful two-stage booster has been used in previous Ground-Based Interceptor tests. Lockheed Martin is managing a second design, with a flight test expected in the next few months.

**MDA Selects Adak for Sea-Based X-Band Radar**

The Missile Defense Agency has selected Adak, Alaska, as the Primary Support Base for the Sea-Based X-Band radar. The PSB includes a mooring site and minimum logistics support for the SBX. The SBX is a part of the Ground-Based Midcourse Defense system, a missile defense system designed to intercept and destroy long-range ballistic missiles aimed at the U.S. homeland. The SBX vessel, a self-propelled semi-submersible modified oil-drilling platform, is scheduled to begin supporting GMD operations in 2005. The SBX will provide detailed ballistic missile tracking information to the GMD system, as well as advanced target and countermeasures discrimination capability for the GMD interceptor missiles. The ability of the SBX to deploy to operating locations under its own power allows it to support actual GMD operations as well as realistic testing. The SBX is approximately 390 feet long and 250 feet high, and has a displacement of 50,000 tons.

**Missile Defense Agency's Space-Based Boost Phase Program Put On Hold**

The Missile Defense Agency has suspended plans to move forward with a space-based variant of kinetic energy boost phase intercept capability, but plans are still moving forward for the ground-based program. Senior officials from the Missile Defense Agency (MDA) and industry said they have made significant progress in maturing the interceptor missiles, radars, satellite sensors and command and control elements that will comprise the Ballistic Missile Defense System (BMDS) at the 'initial defensive operations' (IDO) milestone.

On 16 August, the MDA conducted a successful flight test of Orbital Sciences' Boost Vehicle, a three-stage rocket designed to propel Raytheon's Exoatmospheric Kill Vehicle to a point in space at which it can collide with an incoming warhead and destroy it through the sheer force of the impact.

Lockheed Martin is managing a second design, with a flight test expected in the next few months, said Gen Holly. Because thedesigns have different operational characteristics, he said, the MDA will field both of them.

The initial BMDS, dubbed Block 2004, is geared toward an Asian threat. At the IDO milestone, it is expected to feature six interceptors in silos based at Fort Greely, near Fairbanks in central Alaska, and four silo-based interceptors at Vandenberg Air Force Base on the southern California coast. The agency will upgrade an early-warning radar at Beale Air Force Base, California, to track targets emanating from the west.

The Navy expects to have three AEGIS-equipped destroyers available at IDO that can be forward-based to track missiles and feed the data into the BMDS, said Lt. Cdr. Tate Westbrook, the MDA's deputy program manager for the AEGIS BMD element. The Air Force Airborne Laser is expected to be online around 2005. Whether its megawatt-class high-energy laser will be available by then to shoot down missiles in their boost phase is unclear. At the least, the platform's sensors could help acquire and track targets for the BMDS.

**Iran Deploys Shihab-3 Long-Range Missile**

According to *World Net Daily*, U.S. officials have confirmed that Iran has deployed the new Shihab-3 long-range missile with the Islamic shock troops for the first time. Iran's official Voice of the Islamic Republic Radio reported July 20 that the missiles were turned over to the Islamic Revolutionary Guards Corps. Also supplied were Su-25 jet fighters and transport and attack helicopters. The deployment represents a major advance in Iran's power projection since the country previously had only short-range missiles similar to 180-mile Scuds.

The Shihab-3 ballistic missile (Shihab in Farsi means meteor shooting star) is a road-mobile, medium-range missile that travels up to 930 miles. It is believed capable of carrying a 2,200-pound warhead. The missile is based on the design of the North Korean Nodong missile. The missile can hit Israel, Iraq, Turkey, Russia and parts of southern Europe.

**U.S. Officials: North Korea Has More Capable Missile**

Reuters reported that U.S. officials suspect North Korea has used Russian technology to develop a new intermediate range ballistic missile that may be its most capable and accurate than its Scud, No Dang or Taepo Dong system. In addition to working to improve the accuracy and range of all its three existing missile systems, the North Koreans have been "developing and perfecting a completely new and different missile system, an intermediate range missile system based on an improved different technology," one official told Reuters. According to Reuters, U.S. officials said the missile is based on Russia's SSN6, a submarine-launched ballistic missile deployed in 1969 with a range up to 3,400 miles. The other North Korean missiles are based on Russia's Scud missile, which has a shorter-range and is less accurate.

A senior U.S. official also told the news agency that there also are "indications" the North Koreans have begun limited production of the longer-range Taepo Dong 2 missile, which can reach the continental United States. This, they said, could mean the weapon is nearly ready for export.

U.S. officials told Reuters that there have been hints about the new intermediate range missile for several years but only in the past year has its existence and derivation been confirmed. North Korea did not showcase the new intermediate range missile, as was widely expected, during festivities marking the country's 55th anniversary. U.S. officials speculated that Russia and China may have warned Pyongyang that displaying the new system might disrupt six-party talks on the North Korean nuclear crisis held last week in Beijing.

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